

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

Amendment of Part 27 of the
Commission's Rules to Revise Rules
for Services in the 2.3 GHz Band
and to Include Licensing of Services
In the 47 GHz Band

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WT Docket No. 98-136

To: The Commission

REPLY COMMENTS OF
ANGEL TECHNOLOGIES CORPORATION

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OFFICE OF THE SECRETARY

Angel Technologies Corporation ("Angel"), by counsel, hereby submits its reply comments in the above-captioned proceeding. In these reply comments, Angel urges the Commission to resolve this proceeding so that the benefits of high altitude long operation platforms ("HALOs") can be expeditiously brought to the public.

In its initial comments, Angel supported the Commission's proposal to allow operation of all services in the 47 GHz band permitted in the United States Table of Allocations. Although Angel supported the proposed technical rules, it did suggest several changes as a means to simplify coordination of stratospheric platforms. Specifically Angel encouraged the Commission to increase the proposed 16 dBW EIRP power limit for 47 GHz stations to 44 dBW. In a related matter, Angel urged the Commission to adopt in Section 27.4 of the Commission's Rules the following definition of HAPS:

A station located on an object at an altitude of 15-50 km and at a specified fixed point relative to the Earth.

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This definition will enable multiple HAPS technologies, including HALOs, to flourish in the 47 GHz band. Angel believes that adoption of the rules proposed by the Commission with the few changes suggested by Angel in its comments will allow 47 GHz service to develop.

Except for a few specific issues discussed below, the other commenters generally supported the Commission's proposals and Angel's comments. Specifically, several satellite interests, including Hughes Communications, Inc., Lockheed Martin Corporation and the Satellite Industry Association, argued that there is not sufficient protection to allow the Fixed Satellite Service to operate in adjacent territories or to protect the Fixed Satellite Service from out-of-band emissions caused by High Altitude Platforms ("HAPS"). Angel does not believe it is possible for Fixed Satellite Service systems and HAPS to share the same frequency in the same territory.^{1/} However, it does believe that the coordination procedures specified in Section 101.103 of the Commission's Rules is a suitable mechanism to insure that Fixed Satellite Service and HAPS systems can operate in a compatible manner in adjacent REAGS. It therefore urges the Commission to adopt the proposals on coordination in the Notice of Proposed Rulemaking.^{2/} Likewise, Angel concurs with the Commission's view that spurious emissions and frequency stability requirements be applied to out-of-band emissions. Specifically, Angel believes that 47 GHz band licensees should be required to

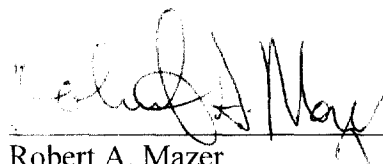
^{1/} Angel does believe that it may be possible for a HAPS system to share spectrum with a terrestrial system in the same frequency in the same territory. Given the complex coordination issues, however, Angel believes that the 47 GHz licensee should determine how to best deploy technology in a particular region. The licensee should be allowed to operate HAPS and terrestrial systems in the same spectrum using band segmentation or any other approach as deemed appropriate. These deployment decisions should be based on the business and technical requirements of the licensee.

^{2/} See Notice of Proposed Rulemaking in WT Docket No. 98-136, FCC 98-142, released July 29, 1998 at paras. 137-138.

attenuate power below the transmitter power (P) by at least $43 + 10 \log 10(P)$, or 80 decibels, whichever is less, for any emission on all frequencies outside the licensee's authorized channel.

The National Research Council ("NRC") and National Radio Astronomy Observatory expressed concern that Radio Astronomy Service ("RAS") operators in the 42.5-43.5 and 48.94-49.04 GHz bands might be harmed by out-of-band and spurious emissions caused by HAPS operation. NRC urges the Commission to wait until after WRC-00 addresses questions relating to this issue. Angel disagrees. Specifically, Angel believes that the Commission's coordination proposals are sufficient to protect the RAS. To the extent that WRC-00 determines that RAS needs specific protection, such protection can be accommodated in a manner consistent with the proposed coordination process.

Respectfully submitted,



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Dated: October 13, 1998

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on this 13th day of October, 1998, a true and correct copy of the foregoing Reply Comments of Angel Technologies Corporation was served by first class mail, postage prepaid, upon the following:

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